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REMARKS/ARGUMENTS

Applicant appreciates the Examiner's time in the interview of July 13, 2006 and in reviewing this case.

This paper is intended as a full and complete response to the Office Action dated May 31, 2006, having a shortened statutory period for response set to expire on August 31, 2006.

Claim 1 is currently amended in the Application.

Claims 19, 20, 21, and 23 are Withdrawn – Currently Amended in the Application

Claims 1-7, 9-23 are pending in the Application.

I. Drawings

The Office Action objected to the drawings for failure to comply with 37 CFR 1.84(p)(5), for failing to mention the following reference character(s) in the description: 110, 120, 130, 140, 150, 160, 170, 260, 250, 240, 230, 220, 320, 330, 340, 350, 360, and 270.

Applicant has amended the specification the above mentioned reference characters are now included.

Applicant believes that the amendments have been done in such a way to obviate the objection. Applicant believes that no new subject matter has been added. Reconsideration of the drawings in view of the amended disclosure is respectfully requested.

II. Claim Rejections 35 USC § 102

The Office Action rejected Claims 1-2, 4-11, 15-18 and 22 under 35 USC § 102(b) as being anticipated by *Bryson*.

Applicant's process is a thermal process for treating a material to improve structural characteristics of the material. Applicant's process cools the material to a first target temperature ranging from -120°F and -380°F, stopping and holding the material at the first target

temperature for at least two hours, increasing the material to a second target temperature ranging from 0°F and 1400°F, stopping and holding the material at the second target temperature for at least twenty four hours, and repeating these steps at least two additional times. (Applicant's Application Claim 1) Applicant has amended the claims to consisting of rather than comprising to overcome the rejection based on *Bryson*.

Repeating the steps of cooling and heating the metal as taught by Applicant provides benefits to the metal by removing the micro-stresses. These micro-stresses typically occur during the heating and cooling stages of the metal. Heats are used to remove stresses caused by cooling. Cooling is used to remove stresses of the heats. Repetition of the cycles lower both sets of stresses to levels unachieved by *Bryson*.

Bryson specifically teaches away from the use of repetition in the cooling and heating steps in pages 67 and 84 wherein it states that no further benefit is obtained from repeated tempering with heat to relieve the stresses of cold, as noted in the interview. Additionally, *Bryson* only teaches cooling to the temperature of dry ice, which is about 109°F, not the -120 °F temperature which is claimed. The coldness of dry ice is -109.3°F (<http://www.wrh.noaa.gov/vef/kids/dryice.php> last accessed June 28, 2006).

Claims 2, 4-11, 15-18 and 22 depend upon independent Claim 1, and therefore include all of the limitations thereof. Since Applicant believes that independent Claim 1 is patentably distinct from *Bryson*, Claims 2, 4-11, 15-18 and 22 are patentably distinct from *Bryson* as well. Reconsideration of the rejection to the Claims in view of the remarks is respectfully requested. Applicant believes that no new subject matter has been added.

VII. Claim Rejections 35 USC § 103

The Office Action rejected Claims 1-3, 7-10 and 15 under 35 USC § 103(a) as being unpatentable over *Groll* (US 6,544,669) in view of *Bryson*.

Groll describes a method for treating aluminum which cools aluminum to a temperature from -100 °F to preferably less than -300 °F (*Groll* Column 5, line 8). *Groll* does not hold the metal at a heated temperature as Applicant's Application does. Further *Groll* does

not teach holding the material at specific temperatures for a specified period of time as taught by Applicant. Applicant specifically notes that using additional time to hold the metal at a specific temperature creates a higher quality stress reduced metal.

Claims 2-3, 7-10 and 15 depend upon independent Claim 1, and therefore include all of the limitations thereof. Since Applicant believes that since independent Claim 1 is patentably distinct from *Groll* (US 6,544,669) in view of *Bryson*, Claims 2-3, 7-10 and 15 are patentably distinct from *Groll* (US 6,544,669) in view of *Bryson* as well. Reconsideration of the rejection to the Claims in view of the remarks is respectfully requested. Applicant believes that no new subject matter has been added.

The Office Action rejected Claims 12-14 under 35 USC § 103(a) as being unpatentable over *Bryson* in view of *Weisend* (Handbook of Cryogenic Engineering).

Weisend discusses the structure of a cryogenic chamber, more specifically a heat exchanger. However, *Weisend* does not supply the missing teaching on repeated heat and cooling with hold times as taught by applicant.

Applicant is not claiming the structure of a cryogenic chamber. Applicant is claiming the process of utilizing a thermal process for treating metals using cryogenics temperature with heating and holding multiple times.

Claims 12-14 depend upon independent Claim 1, and therefore include all of the limitations thereof. Since Applicant believes that independent Claim 1 is patentably distinct, dependant Claims 12-14 are patentably distinct as well. Reconsideration of the rejection to the Claims in view of the remarks is respectfully requested. Applicant believes that no new subject matter has been added.

Applicant appreciates the Examiner's time and attention to this matter. Applicants believe Claims as now provided are in condition for allowance. Reconsideration of this application is respectfully requested. The Applicant invites the Examiner to contact the Applicant's representatives (713.403.7411) if any questions concerning this Application arise.

Respectfully submitted,

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